

ABSTRACT OF THE DISCLOSURE

A polarization beam combiner/splitter ("PBCS") for combining and splitting multiple channels of light beams simultaneously is disclosed. The PBCS includes a first fiber array, a second fiber array, and an optical core composed of a birefringent or other suitable material. The first fiber array includes a plurality of optical fiber pairs, while the second fiber array includes a corresponding plurality of optical fibers. The optical core is sized to modify light beams from any of the optical fibers of the first or second array. In a beam combining operation, multiple channels of polarized beams are emitted by the optical fiber pairs of the first fiber array and passed through the optical core, which combines the beams into dual-polarized combined light beams. The combined beams exit the optical core and are received by the second array of optical fibers. A similar beam splitting operation can be performed on multiple combined beams.

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